

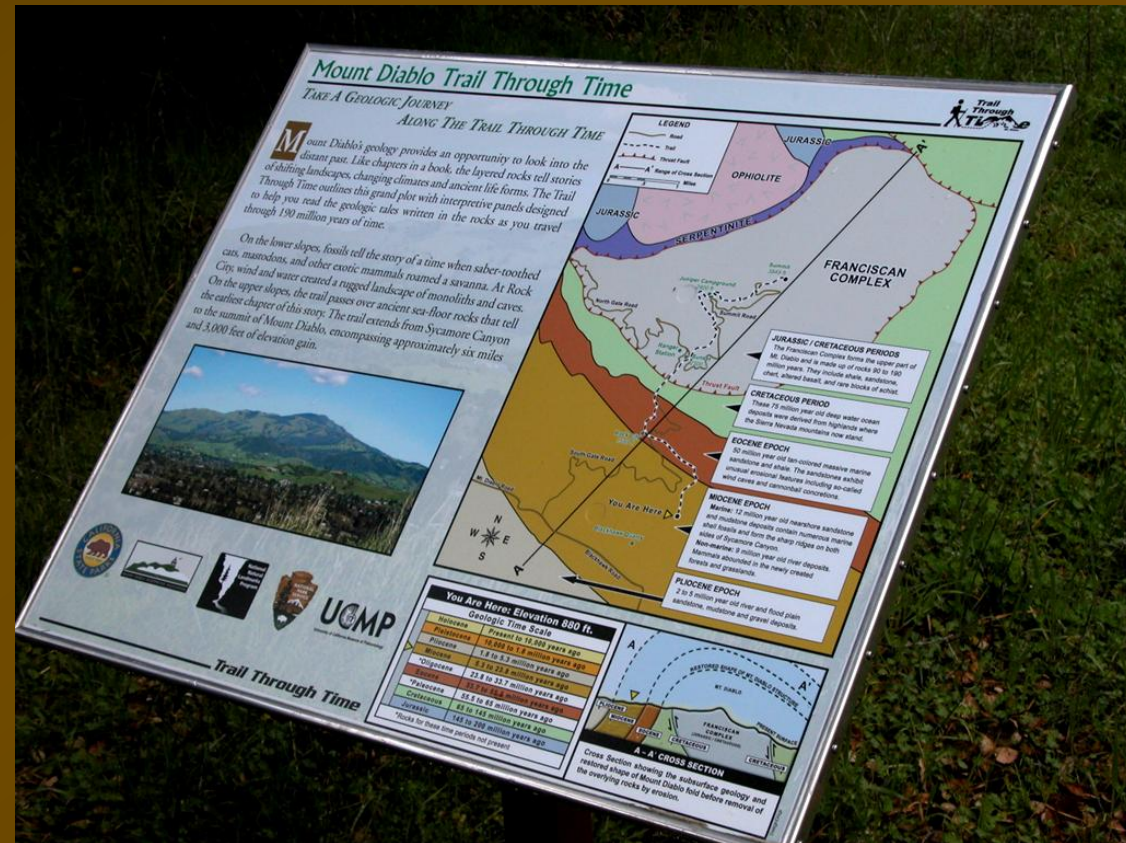
Interpretation and Trail Management

Session Objectives

- Identify what interpretation is and how it differs from other forms of communication
- Discuss how interpretation can be used to achieve your trail management goals
- Identify some of the various methods of interpretation that can be used to communicate your message

What is Interpretation?

Communication
Information
Education
Provocation
Making
connections



Why do we Interpret?

Enrich the visitor experience

Help people develop a connection with the resource

Encourage stewardship behaviors

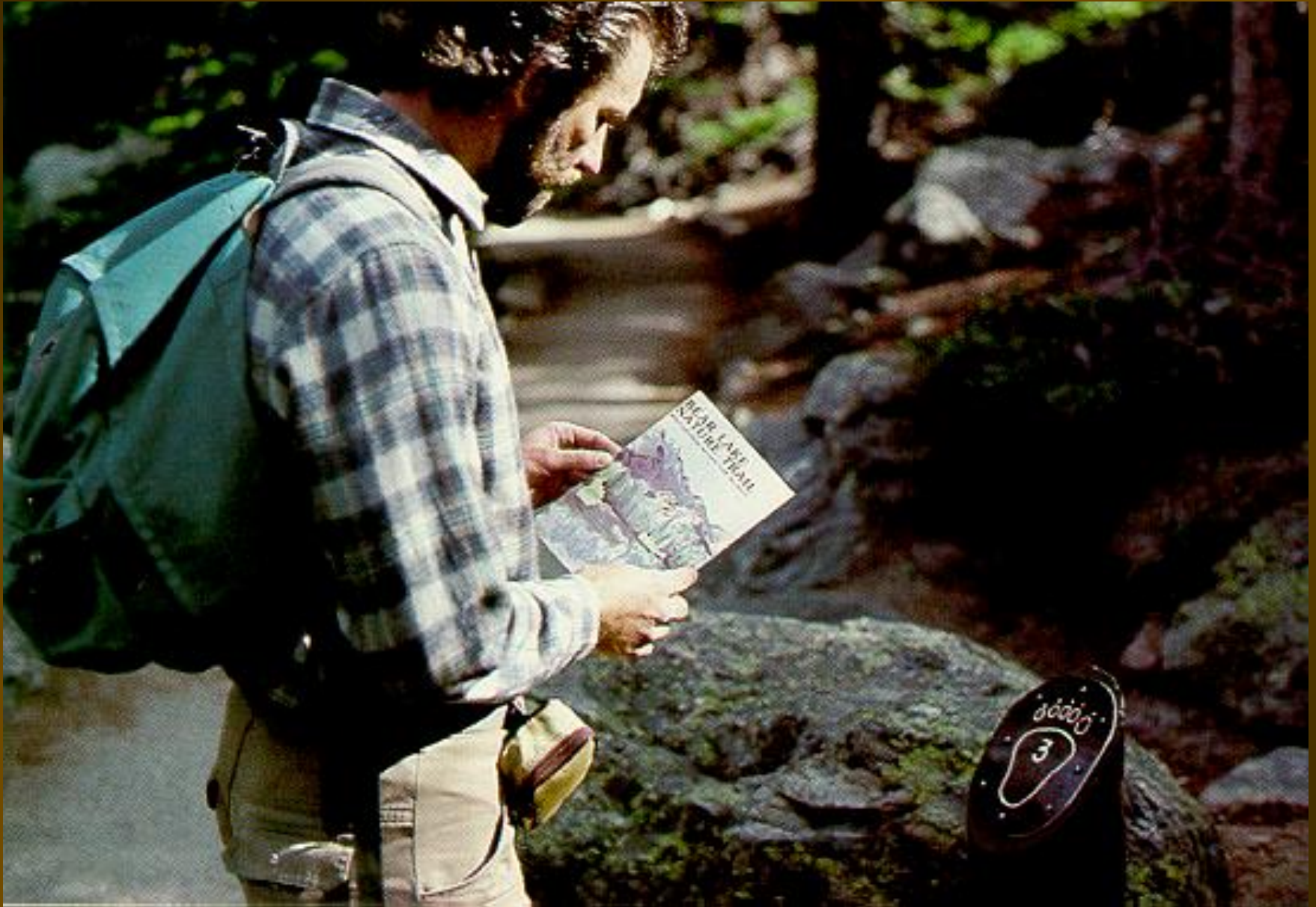
Support management's goals of land protection and utilization

**Enrich the visitor experience and
make a connection with the resource**

Interpretive panels



Trail guides



Interpreter led walk



Trail design



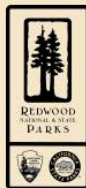
Resource protection and land stewardship

Meeting resource management goals





Don't Help a Good Bird Go Bad!



*You can help save the threatened marbled murrelet by not leaving trash at the trailhead or at your camp. Ravens, jays, and crows (corvids), following trails of trash, fly deep into the old-growth forests. Once these corvids arrive, they stay, eventually finding the murrelet's nest high up on old-growth tree limbs, and eat the eggs and chicks of a declining species. **Thank you** for giving this robin-sized seabird the chance to survive in the ancient forest.*

Promote Trail Design, Construction and Maintenance Concepts

Following the Shape of the Land



Old trail. Notice roots exposed by erosion.



New contour trail. Notice no erosion.

Old Trails and Unexpected Problems

Many old park trails are former farm roads and driveways. The farmers may have had their reasons for building roads straight up and over the hills—trouble is, rainstorms turn these trails into channels for fast water runoff and mudslides.



Old farm road

New trails are being built along the natural curves of the landscape in Lebanon Hills. Contour trails reduce erosion and help prevent sediment from washing into lakes and ponds. A contour trail is a stable, long-lasting trail.



New contour trail

Erasing the Damage

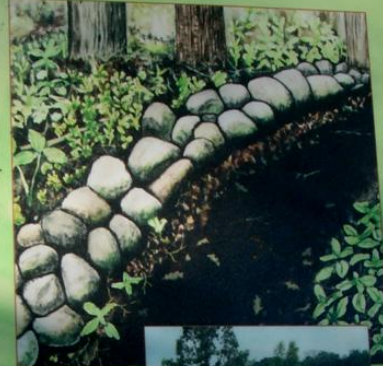
Eventually, as the old, straight-line trails are re-routed, all the trails in Lebanon Hills will be environmentally friendly contour trails such as the one shown above.

Dakota
COUNTY
PARKS

FLINT HILLS
NATURAL AREA

Rock Solid

These rocks have found a job preventing erosion of the park landscape. Although this trail follows the contour or shape of this steep hillside, the solid support of this rock wall allows water to flow down and over the trail without disturbing the topsoil and rocks on the hillside.



Travelers from a Different Time and Place

If these rocks could talk, they would have many stories to tell! They were brought here by a glacier, a giant block of moving ice, more than 12,000 years ago. Geologists can tell where rocks came from by their color and composition.



The rocks used along the trails were picked up in the park after being exposed by the plow, erosion, or trail work.

Dakota
COUNTY
PARKS

FLINT HILLS
NATURAL AREA

Supporting Trail Management Goals

Trail hazards and warnings



Trail Closures

WHY CLOSE TRAILS?

OPEN SPACE WILL BE CLOSING
TRAILS AT MT. FALCON AND WHITE RANCH PARKS.

PROBLEM: Use of muddy trails greatly
increases erosion.

Bypassing or shortcutting muddy
trails destroys surrounding
vegetation.

SOLUTION: To lessen environmental damage
during muddy conditions, Open
Space will temporarily close trails.

Please avoid using any park when the
ground is muddy. If you do encounter
muddy trails please stay on the trail.

For general trail information and current closures
call the Trails Hotline at 271-5975



**JEFFERSON COUNTY
OPEN SPACE**

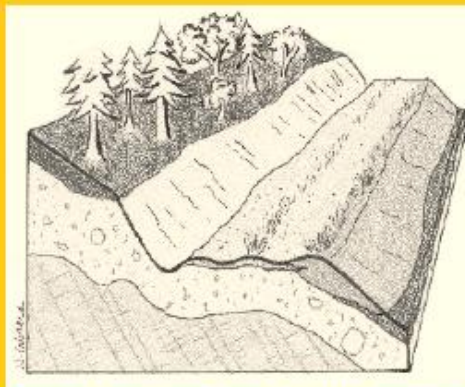
The impacts of new trail projects



The Ossagon Trail Is Slimming Down

From September 16, 2008 to June 1, 2009 the Ossagon Trail in Prairie Creek Redwoods State Park will be closed to visitor use. This closure will enable park managers to convert the old logging road currently used as the trail, to a redesigned single-track trail and to construct a new bridge over Ossagon Creek. These improvements will provide a more scenic and challenging ride for backcountry cyclists.

Before Conversion



Abandoned logging roads are often wide deeply rutted routes that offer little challenge for the backcountry rider.

After Conversion



Road-to-trail conversions offer a narrow and more sinuous riding experience. Road rehabilitation also improves the scenic character of the trails.

The trail shown on right was converted from a twenty-foot wide road in 2001. The trail now is a popular route for park visitors. The Ossagon road-to-trail project will provide an improved riding experience on the very popular 20 mile coastal loop trail within Prairie Creek Redwoods State Park.

For more information contact:
Brian R. Merrill
Engineering Geologist
North Coast Redwoods District
California State Parks
P.O.Box 2008
Eureka, CA 95502
(707) 445-5344



Trail Closure Notice

Interpretive panels that identify the need and value of the project

Road Reconstruction and Re-engineering

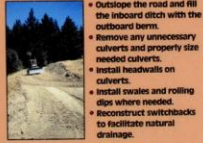
Many backcountry roads were constructed prior to park acquisition and their design and construction did not focus on longevity. Consequently, there are many problems causing environmental degradation. To resolve these problems, park roads are being reconstructed and re-engineered.

Old Roads on a New Path



Problems

Insloping of roads directs and concentrates water along the inboard hinge of the road. This design requires an inboard ditch to collect the water and culverts to periodically drain the ditch. These ditches and culverts often plug with woody debris and slide material. As a result, water is unable to drain properly. Eventually, water spills down and across the road causing gullies and fill slope washouts which can lead to complete failure.



Solutions

- Outlope the road and fill the inboard ditch with the outboard berm.
- Remove any unnecessary culverts and properly size needed culverts.
- Install headwalls on culverts.
- Install swales and rolling dips where needed.
- Reconstruct switchbacks to facilitate natural drainage.



Benefits

- Reestablishment of natural drainage patterns.
- Reduction in erosion and the risk of road failure.
- Reestablishment of native vegetation.
- Reduction of human impact on the environment.
- Reduction in road maintenance and repair costs.
- Improved surface performance and safety.



Trails may threaten park resources if not properly designed, constructed and maintained.

Many early California State Park trails were constructed following the path of least resistance, without long range planning and ecological sensitivities. These trails have fallen into disrepair, making them unsuitably rough and environmentally degrading.

On The Path to Better Trails

Problems



Poor design and construction of trails may result in the following problems.



- Steep grades
- Poor drainage
- Erosion
- Entrenched trails
- Failing structures
- Poor sustainability

Trail reconstruction can look devastating at first glance



Please bear with us while we create better trails

Solutions and Benefits



Using improved methods and materials new trails and structures are being built and old trails are being reconstructed and rerouted. Impact on park resources is reduced, maintenance and replacement costs decrease and visitor access, safety and enjoyment increase.

You can help the environment by staying on designated trails.

Roads from the past threaten the future of our watershed.

California State Parks is implementing a watershed rehabilitation program. This program addresses problems caused by poorly constructed roads built before the state acquired the land. Understanding and being sensitive that some roads may be historic, the program utilizes proven restoration techniques to reduce erosion. Over time this process recovers the health of the watershed and those plants and animals that depend on it.

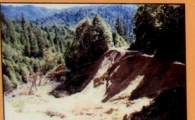
Watershed Rehabilitation

Problems

- Culverts, ditches, and stream crossings fail
- Rills, gullies and landslides occur
- Hillsides are denuded of vegetation
- Streams are choked with sediment



Gully erosion Washed out culvert



Landslide caused by road failure

Solutions

- Road rehabilitation
- Road to trail conversion
- Stream crossings excavated
- Side cast soil is recovered
- Revegetate with site specific native plants



Original roadbed After rehabilitation



After rehabilitation

Benefits

- Future erosion is inhibited
- Water runoff patterns returned to normal
- Improved water quality
- Reestablishment of plants and animals



Original roadbed After conversion



After Conversion

Follow the flow of stream restoration

Our north coast streams are suffering from decades of abuse. Stream restoration returns them to a healthy condition. This process repairs salmon habitat, decreases erosion and improves water quality.

Look below to follow the flow of stream restoration from start to finish.

See the stream before we restore.

- Streams have been damaged
- Lack of in-stream structures (boulders and logs)
- No pools (see continuous riffle)
- Poor salmon spawning habitat



Part logging operations, inadequate watershed management and improperly placed roads have damaged local streams. Accumulation of sediment and log debris in the stream channel has led to wide, shallow stream channels without pools. Excessive erosion deposits sediment in the stream that smothers salmon eggs before they even hatch.



Methods create deep pools, narrow the stream channel and control erosion. All these procedures improve salmon spawning and rearing habitat.

What does the restoration crew do?

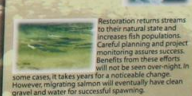
- A stream is carefully assessed and a restoration plan is prepared
- Crews install in-stream structures
- All structures are securely fastened
- Project success is monitored over a long period of time



The process begins with teams of professionals carefully evaluating a stream. Next, hand crews begin working directly in the stream channel. Completing larger projects may require heavy machinery. Workers move boulders, install logs and stabilize the stream bank. These methods create deep pools, narrow the stream channel and control erosion. All these procedures improve salmon spawning and rearing habitat.

A restored stream is a healthy stream

- Pools are created and stream channel is narrowed
- Fish habitat is improved
- Fish have the chance to rebuild their populations
- Hard work has paid off



Restoration returns streams to their natural state and increases fish populations. Careful planning and project monitoring ensures success. Benefits from these efforts will not be seen overnight. In some cases, it takes years for a noticeable change. However, migrating salmon will eventually have clean gravel and water for successful spawning.

To learn more about a stream restoration project in your area, or to inquire about volunteering, contact your local State Park, Fish and Game, or California Conservation Corps representative.

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Watershed Rehabilitation

Problems

- Culverts, ditches, and stream crossings fail
- Bins, gulches and landslides occur
- Hillsides are denuded of vegetation
- Streams are choked with sediment



Gully erosion



Failed culvert



Landslide caused by road failure

Solutions

- Road rehabilitation
- Road to trail conversion
- Stream crossings excavated
- Slope catch socks recovered
- Revegetation with site specific native plants



Road to trail conversion



Stream excavation



Slope catch sock



Revegetation

Benefits

- Erosion is reduced
- Water runoff patterns restored
- Improved water quality
- Reestablishment of plants and animals



Improved water quality



Healthy stream bed

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On The Path to Better Trails

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Poor design and construction of trails may result in the following problems.



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Rebuilding a Trail from the Ground Up



Before



After



Before



After

The trail that you're standing on is the product of people coming together to improve access to the outdoors while also protecting the environment. The Goodspeed Trail once needed major repairs before it could be sustainable and safe. It had severely eroded, causing landslides, habitat loss, and increased sedimentation of Sonoma Creek, threatening endangered fish.

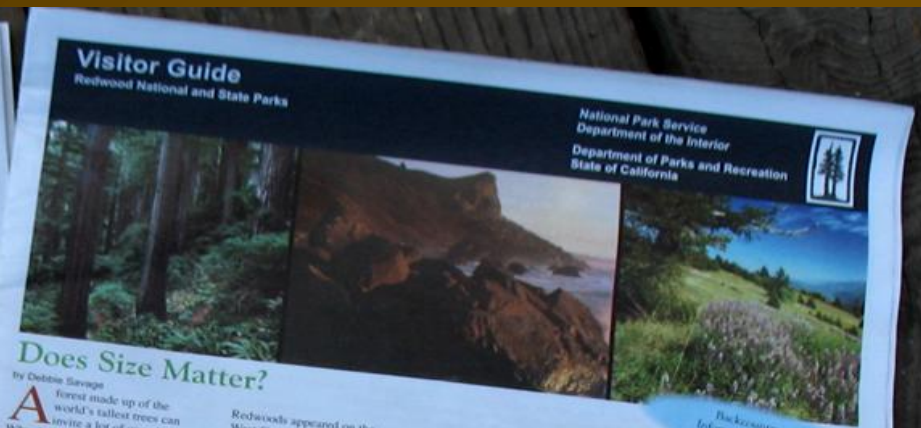


State Parks in partnership with park volunteers and community members, initiated a project to address the problems of this popular trail. Paid for by Deferred Maintenance funding, a hard-working youth crew from the California Conservation Corps skillfully reconstructed major sections of the trail, built rock steps, walls, and drainage features.

For more information on getting involved with State Parks visit www.parks.ca.gov.



Print media trail maps and visitor guides



Does Size Matter?

Forest made up of the world's tallest trees can invite a lot of questions. Why do coast redwood trees, *Sequoia sempervirens*, grow only in northern California? Why do they grow so tall? Is there something more significant about this forest than the size of the trees?

The redwood forest attracts visitors from around the world for many reasons; one is its age. Indeed this forest contains descendants of some of the oldest plants on Earth. You can almost imagine a dinosaur crashing through the understory and thundering down the trail. Ferns and horsetails have evolved over 300 million years and once formed forests 50 feet tall.

More than 100 million years ago

Redwoods appeared on the West Coast of North America about 20 million years ago. The Mediterranean climate provides a safe haven for trees that need abundant water, little fluctuation in temperature year round, and summer fog.

Walking in the ancient redwood forest, amongst the world's tallest trees, you can almost imagine a dinosaur crashing through the understory and thundering down the trail.

Gradually eliminated

Coast redwood trees can soar to more than 370 feet tall, but they are not the only tree that grows tall in a redwood forest. Douglas-fir trees have grown even taller; one record-breaker in British Columbia measured 400 feet. Western hemlock trees can reach 250 feet tall. Sitka spruce height rivals the hemlock and its bulk can match a medium-sized redwood.

If size is measured in years, then perhaps it does matter. Resistance to fire, insects, disease, and fungi allow the coast redwood to live more than 20 human lifetimes. Redwood trees seldom fall over. Their shallow roots form an extensive system of intertwining threads that connect with the roots of neighboring trees, providing resistance to the

disney plates emerge with the first winter rains, and 80-foot big-leaf maples turn streambanks into a burst of fall colors.

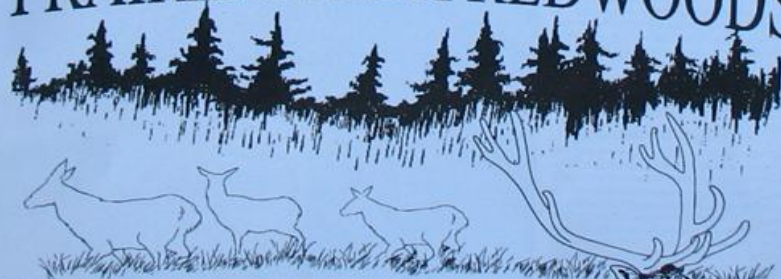
No wonder the smaller things are easily overlooked. Look below your knee along any forest trail and you will find a carpet of redwood sorrel, plants that resemble three-toed sloths covering the forest floor. Around among them you might find wild ginger, Pacific starflower, or yellow redwood violets. Any time of year you can find something blooming.

Then consider what might be living in the trees themselves. Suspended 300 feet above, soil mats trapped in elbows of limbs form a miniature forest floor that provides habitat for a world of plants and animals, some that never touch the ground. This complex biomass rivals the tropical rainforests and qualifies Redwood National and State Parks as a World Biosphere Reserve.

Does size matter? It depends upon how you measure it. Redwood National and State Parks may be home to the world's tallest trees, but the challenge is to see the forest, despite the trees.

LOOK for redwood forest indicator species scattered throughout this guide. Indicator species definition: page 5

PRAIRIE CREEK REDWOODS




STATE PARK



Redwood National and State Parks
a World Heritage Site


Trail Map and Guide

Internet



nps.gov
(home)


National Park Service
U.S. Department of the Interior




☒ Search this park
☐ Search nps.gov

Grand Canyon

National Park

text size: 



PARK HOME

PLAN YOUR VISIT
Directions
Operating Hours & Seasons
Fees & Reservations
Things To Do
Places To Go
Guided Tours
River Trips
▶ **Backcountry Hiking**
Day Hiking
Overnight Hiking
Hiking Safety
Hiking Tips
Hiking FAQ
Summer Hiking
Guided Hikes
Weather Dangers
Private Stock
Food Storage
Campsite Info
Distances
Backcountry Permit
Updates and Closures
Ranger Programs

Backcountry Hiking


backcountry hiking includes:


Day Hiking
Overnight Hiking
Hiking Safety
Hiking Tips
Hiking FAQ
Summer Hiking
Guided Hikes

Weather Dangers
Private Stock
Food Storage
Campsite Info
Distances
Backcountry Permit
Updates and Closures

First time Grand Canyon hikers tend to react to the experience in one of two ways: either they can't wait to get back, or they swear they'll never do it again.

Going on a hike is wonderful way to experience some of the canyon's rich natural beauty and immense size. However, even if you are an avid hiker, hiking the Grand Canyon is very different from most other hiking experiences.





Backcountry Updates and Closures
including trail restrictions
more...





Meeting with stakeholders or user groups and teaching trail design



Holding user conflict resolution & trail etiquette workshops



Developing user assistance units



**Consider
your
message
at each
stage
of the
process**



**“through interpretation -
understanding,
through understanding
- appreciation,
through appreciation
- protection.”**